

A study on metabolism of Bisphenol-A in *Sprague Dawley* rats

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Environmental estrogen-like chemicals have been recognized as a potential hazardous factor in human health. Bisphenol A is an essential component of epoxy resins used in the lacquer lining of metal food cans, as component of polycarbonate and in dental sealants. Recently considerable attention has been focused on a wide variety of chemicals in the environment that have estrogenic activity, variously referred to as environmental estrogens, xenobiotic estrogens, or xenoestrogens. Bisphenol A is a xenoestrogen, that is not estrogenic by design and reported to have estrogenic activity. The affinity of Bisphenol A to estrogen receptors in the MCF-7 human breast cancer culture media was much higher than that of estradiol. These estrogen-like chemicals find their way into the food chain causing adverse effects. The toxicity of Bisphenol derivatives for human and in particular its potential for acute poisoning has been reported.

Sulfate conjugation represents a major pathway *in vivo* for the biotransformation and/or excretion of xenobiotics or endogenous compounds. Sulfate conjugation represents a major pathway *in vivo* for the biotransformation and/or excretion of xenobiotics or endogenous oestrogens. The sulfation may increase the water-solubility of exogenous or endogenous compounds facilitating removal from the body.

In the present study, *Sprague Dawley* rats were used as a model to investigate the occurrence of sulfation of Bisphenol A *in vivo*. Eight weeks old female rats were divided into 2 groups control (n=4) and test (n=8). The test group and control group were treated subcutaneously with $300 \mu\text{g kg}^{-1}$ Bisphenol A and corn oil 0.1 mL respectively, for 7 days. Serum samples were analysed by HPLC using ODS 80 TM TSK-GEL column, Bisphenol sulfate was detected in the serum samples of test rat treated with bisphenol but not in the untreated group. In conclusion, the occurrence of sulfation as a biotransformation mechanism of Bisphenol A prior to excretion was confirmed.

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